

REMARKS

Claims 1-14 have been examined. With this amendment, Applicants add claims 15-20.

Claims 1-20 are all the claims pending in the application.

1. Formalities

The Examiner has not acknowledged the claim for foreign priority or confirmed that the certified copy of the priority document has been received. Applicants request that the Examiner acknowledge these items in the next Office Action.

Applicants thank the Examiner for initialing the references on form PTO-1449 submitted with the Information Disclosure Statement (IDS) filed on September 24, 2001 and the corrected IDS filed on January 11, 2002.

Applicants thank the Examiner for accepting the drawings filed on September 24, 2001.

2. Claim Rejection Under 35 U.S.C. § 102

The Examiner has rejected claims 1, 7, 8 and 14 under 35 U.S.C. § 102(b) as being anticipated by Katsuragawa et al. (US Patent No. 5,319,549) [“Katsuragawa”]. For at least the following reasons, Applicants traverse the rejection.

Claim 1 recites a method of detecting an abnormal pattern candidate comprising “performing processing, in which a first shape-dependent filter … is utilized … [forming] a fine structure image … [and] performing enhancement processing, in which a second shape-dependent filter … is utilized, on the fine structure image.” The Examiner contends that Katsuragawa discloses these features. Specifically, the Examiner contends that the

morphological filter 26 corresponds to the claimed first shape-dependent filter and the line enhancement filter 23 corresponds to the claimed second shape-dependent filter.

Applicants submit that at least the second shape-dependent filter is not disclosed by Katsuragawa. Katsuragawa discloses that the memory 21 simultaneously outputs the background trend corrected image to the line enhancement filter 23 and the thresholding device 24 (col. 5, lines 19-22, Fig. 2A). The thresholding device 24 then outputs a value to the morphological filter, which then performs filtering on the background trend corrected image (Col. 5, lines 27-30, Fig. 2A).

To the extent Katsuragawa may disclose first and second filters, they both perform image processing on the same image signal (i.e. the background trend corrected image). Line enhancement filter 23 does not perform enhancement processing on the output of the morphological filter 26. Therefore, there is no disclosure or suggestion in Katsuragawa of “performing enhancement processing” on the fine structure image formed by utilizing a shape-dependent filter on an object image as set forth in claim 1.

The Examiner also contends that “[i]ntestitial infiltrates is understood to be synonymous with microcalcification.” For at least the following reasons, Applicants disagree.

Although both microcalcifications and intestinal infiltrates can be detected as an “abnormal pattern candidates”, their respective patterns are completely different from each other. Microcalcification patterns generally appear as white spots on an image and the size of each spot is in the order of [μm]. The outline of a microcalcification pattern on an image is sharp. In

contrast, interstitial infiltrate patterns generally appears as a blurred region on an image and the size of the region is in the order of [mm] at the minimum.

Therefore, an interstitial infiltrate pattern is larger than a microcalcification pattern and the outline of the interstitial infiltrate pattern is mistier than that of the microcalcification pattern. Accordingly, contrary to the Examiner's contentions, the term "interstitial infiltrate(s)" is not synonymous with the term "microcalcification".

Applicants request that the Examiner provide support in the prior art for his contention that "[i]ntestitial infiltrates is understood to be synonymous with microcalcification" as is required by the MPEP. See MPEP § 2144.03.

Because claim 8 recites features similar to those given above, Applicants submit that claim 8 is patentable for at least reasons similar to those given above with respect to claim 1.

Applicants submit that claims 7 and 14 are patentable at least by virtue of their respective dependencies.

3. Claim Rejection Under 35 U.S.C. § 103

A. Claims 2, 3, 9 and 10

The Examiner has rejected claims 2, 3, 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Katsuragawa in view of Takeo et al. (US Patent No. 5,714,764) ["Takeo"]. For at least the following reasons, Applicants traverse the rejection.

Because Takeo does not cure the deficient teaching of Katsuragawa as described above with respect to independent claims 1 and 8, Applicants submit that claims 2, 3, 9 and 10 are patentable at least by virtue of their respective dependencies.

In addition, claim 2 recites a method of detecting an abnormal pattern candidate “wherein a plurality of second shape-dependent filters … [is] prepared for the respective image recording conditions.” The Examiner concedes that this feature is not disclosed in Katsuragawa but applies Takeo to allegedly cure the deficiency. The Examiner contends that Takeo’s alleged disclosure of read-out conditions would disclose the claimed recording conditions.

Applicants submit that recording conditions are separate from read-out conditions and that filters prepared for recording conditions would not necessarily correspond to the read-out conditions. For example, images of different objects taken with different radiation doses could provide similar read-out conditions, but may require different filters based on the respective radiation doses.

Therefore, Applicants submit that claim 2 is patentable because Katsuragawa and Takeo (alone or in combination) do not disclose or suggest the claimed shape-dependent filters prepared for the respective image recording conditions.

Because claim 9 recites features similar to claim 2, Applicants submit that claim 9 is patentable for at least the additional reason given above with respect to claim 2.

B. Claims 4-6 and 11-13

The Examiner has rejected claims 4-6 and 11-13 under 35 U.S.C. § 103(a) as being unpatentable over Katsuragawa in view of Doi et al. (US Patent No. 4,907,156) (“Doi”). For at least the following reason, Applicants traverse the rejection.

Because Doi does not cure the deficient teachings of Katsuragawa as described above with respect to independent claims 1 and 8, Applicants submit that claims 4-6 and 11-13 are patentable at least by virtue of their respective dependencies.

4. New Claims

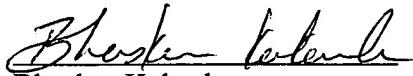
With this amendment, Applicants add claims 15-20. Applicants submit that these claims are patentable at least by virtue of their respective dependencies, as well as the features set forth therein.

5. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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